Cows, Bugs, and Drugs: An Investigation of Sporadic Illnesses due to Multidrug-Resistant *Salmonella* Newport in Massachusetts and Vermont, 1998-2001

Gupta A, Crowe C, Fontana J, Stout A, Bolstroff B, McGuill M, Matyas B, Montgomery S, Pugsley N, Johnson B, Schoenfeld S, and Angulo F

Background: *Salmonella* causes approximately 1.4 million illnesses and 600 deaths annually in the United States. We describe the emergence of multidrug-resistant (MDR) *Salmonella* Newport in Massachusetts and Vermont in 2001.

Methods: All *S*. Newport isolates received between July 1998 and March 2001 were characterized by antimicrobial-susceptibility testing and pulsed-field gel electrophoresis (PFGE) at Massachusetts Department of Public Health. Isolates were defined as MDR if they were resistant to ampicillin, chloramphenicol, streptomycin, sulfamethoxazole, tetracycline, extended-spectrum cephalosporins, and ampicillin/clavulanic acid. In March 2001, a case-control study was performed comparing 34 persons with MDR *S*. Newport (case-patients) to 37 persons with antimicrobial-susceptible *S*. Newport (ill controls) and 94 randomly-selected well controls.

Results: In 1998, no MDR *S*. Newport isolates were identified. From January 1999-March 2001, 120 human S. Newport isolates were identified; 46 (38%) were MDR and 71 (59%) were antimicrobial-susceptible. From January 2000-March 2001, 17 bovine *S*. Newport isolates were identified in Massachusetts and Vermont; all were MDR. One PFGE pattern accounted for 57% of human and 64% of bovine MDR isolates. The median age of case-patients was 23 years, 63% were female, and 34% were hospitalized. In the seven days before illness onset, case-patients were more likely than ill controls to report bloody diarrhea (52% vs.18%, OR 4.7, 95% CI 1.4-17.9), have exposure to farms (21% vs. 3%, OR 9.1, 95% CI 1.1-432), and have no international travel history (0% vs.11%, OR undefined). Case-patients were more likely than well controls to have exposure to farms (22% vs. 3%, OR 16.7, 95% CI 2.0-768.8).

Conclusion: MDR *S*. Newport has emerged in the northeastern United States. Cattle are a reservoir and direct farm exposure is a risk factor for human illness.

Suggested citation:

Gupta A, Crowe C, Fontana J, Stout A, Bolstroff B, McGuill M, Matyas B, Montgomery S, Pugsley N, Johnson B, Schoenfeld S, and Angulo F. Cows, Bugs, and Drugs: An Investigation of sporadic illnesses due to multidrug-resistant *Salmonella* Newport in Massachusetts and Vermont, 1998-2001. 51st Annual EIS conference. April 22-26, 2002. Atlanta, GA.